GUARDIAN

General User Alert Display Panel

Requirements Descriptions
June 10, 2003

Prompts

The GUARDIAN will run persistently on each text and graphics workstation and will sleep until prompted. When prompted, it will awaken and take certain actions. The following is how GUARDIAN can be prompted:

- **Direct** – use of library utility routine like dmNotify(). Perhaps implement one using a TextString:: argument and one using a std::string argument.
- **Indirect**– allows applications not developed within the AWIPS baseline to send prompts to GUARDIAN. This can also be run from the command line. This will likely be an executable taking its arguments from standard input and then calling the direct method above.

Types

The type of situation that is being addressed, in general terms. The following is a list of Typesthat will be recognized by GUARDIAN:

- Event occurred. (EV) Standard event notification.
- Monitor update. (MN) For a monitor utility that will affect some widgetry.
- Action Taken. (AC)ie: in the event that a script is to be run, not related to the handling of any extra GUIs.

Triggered Actions

Once GUARDIAN has been prompted, the GUI can take various actions based on the prompt and the information contained in the prompt. The actions can have a user defined minimum time interval applied to them (see the Configuration section, below), to reduce the amount of actions for overly frequent prompts. These actions can be any combination of the following:

- Text message to operator – in GUI.
- Text message to operator – pop-up new window. If a new one is issued while an old one already exists, keep a log and use only one window. Have pop-up be on top but not take focus.
- Execution of script. (**??**) – in conjunction with either a MN or AC Type, but perhaps exclude EV Types.
- (Possible execution of class member function, designed as pure virtual, requiring the definition in child class.)
- Widget adjustment (for the Monitor Type only)
    - Color change
    - sample text
    - blinking
- Audible alarm
    - Standard system beep
    - Customized sound file

MessageCategories

When a message is sent to GUARDIAN, it must be categorized into one of the listed defined categories below. This is sent as an argument and can be used to define which text message line the category gets applied to.

HM monitor (See Monitor Definition File section below)	(MON)
system status	(SYSTAT)
system communications	(SYSCOM)
forecast checker	(FORCHK)
radar data/comms	(RADAR)
text product create/send (textDB)	(TXTPROD)
miscellaneous application message	(MISC)

Configuration of the GUI

Each machine running the GUI will have its own active configuration. This configuration can also be saved and retrieved. This configuration will provide the following control:

- GUI will provide a method to define the Triggered Action and time interval according to:
    - Type
    - Message Category
    - Priority
- GUI will provide a method to disengage the following:
    - Audio
    - Perhaps pop-up (red banner)?
- GUI will provide a method to adjust how the GUI text is displayed according to:
    - Message Category
    - Layout of text lines displayed. (also affects layout of monitor widgets):
        - One line
        - Two lines, horizontal
        - Two lines, vertical
        - Three lines, vertical
        - Four lines, vertical
        - Four lines, quad.
- GUI will provide default configurations for at least:
    - Text workstation. (include text product, exclude radar)
    - Graphics workstation – normal mode (include radar, include text product)
    - Graphics workstation – warning mode (include radar, exclude text product)
- Parts of the GUI configurations can be locked by someone with root privileges. This will allow for user customizability as well as office requirements.

Monitor Definition File

In order to make adding and deleting monitors easy, a Monitor Definition File will be used. It will contain the following text fields, delimited by the "|" character:

- Monitor Name (Monitor Key)
- Bitmap filename (sub-path?)
- Configuration Executable Name (not required)
- Actioned script (not required)
- Listing of colors (hex) (indirectly, number of categories as well). Perhaps limit the number of levels to 2 to 6.
- Perhaps a listing of image files. These files would be sought first in $FXA_HOME/data and then in $FXA_DATA/customFiles.

Usability Considerations

Along with the customizability of the GUI, there are also various usability issues, affecting how the GUI is used, what it can do, and how it can do it.

- GUI should not take focus, nor create any pop-up windows that take focus.
- GUI will always be on top (but not always possess cursor focus).

- GUI screen estate should be minimized severely! (perhaps to the height of a window title bar) This implies no use of a window frame.
- GUI will perhaps provide multiple text lines (but certainly one).
  - These text lines can be expandable to show the last several messages. The number provided can be defined by the user in the configuration.
  - The operator should be able to choose from a select list, which text lines are viewable.
- GUI will provide a small section for color coded widgets.
  - These widgets may launch an additional GUI that will allow configuration of that monitor. This additional GUI will be provided by the monitor application, not GUARDIAN.
- GUI will start upon log-in, but need to provide method to re-start, in case something goes wrong. (DataController?)
- When a text message is presented by the GUI, the text widget will signal the new message by one of the following methods chosen by the operator:
  - Blinking: using a second color that is close to the initial color.
  - ??
  - Nothing
- Perhaps allow the GUI window to be resized according to the layouts described in the Configuration section above.
- Due to a lack of window frame, provide an alternative method for moving the window (ie, right click drag).

Miscellaneous

- Use 5 general priority levels. (Note: the number of priority levels related to a monitor will vary according to the monitor configuration.)
  - 1 - Lowest priority. Perhaps intended for text notification only with the possibility of being turned off completely.
  - 2 - Low priority
  - 3 - Moderate priority
  - 4 - High priority
  - 5 - Highest priority. Perhaps intended for red-banner window, without the possibility of being turned off (but still with the possibility or prescribing a different Triggered Action. *Reserve* for important items that **must** be addressed immediately!
- GUARDIAN will log all messages sent to it to log files as EVENTs. The info provided here will include all arguments sent to GUARDIAN.
- When prompting GUARDIAN, the caller must provide:
  - Message Category
  - Key
  - Priority
  - Text message
- If the user turns some messages ‘off’, how can we ensure that they don’t forget to turn them back on? Perhaps we could:
  - Set default timer to revert to default configuration
  - Set default timer then ask user if they want to revert or not. If not answer in a certain time, revert to default anyway.

Args sent to GUARDIAN

- priority/color level
- Category
- Key
- Text Message